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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,756	04/08/2004	Bradley E. Johanson	S03-093	2458

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LUMEN INTELLECTUAL PROPERTY SERVICES, INC.
2345 YALE STREET, 2ND FLOOR
PALO ALTO, CA 94306

EXAMINER	
TIV, BACKHEAN	

ART UNIT	PAPER NUMBER
2151	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/821,756	JOHANSON ET AL.	
	Examiner	Art Unit	
	Backhean Tiv	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Claims 1-22 are pending in this application.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 4/8/04 has been considered.

Drawings

The Drawings filed on 12/26/03 are acceptable.

Claim Objections

Claims 13,16-22 are objected to because of the following informalities:

As per claims 13,16-22, recites bounded environment (H1), human centered interaction and flexible reconfiguration (H2).....failure tolerance and recovery (P9), and application portability (P 10). It is unclear what, (H1), (H2).....(P9), (P10), are referring to.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-22 are rejected under 35 U.S.C. 101 because these claims are nonstatutory. MPEP 2106 states that, "The claimed invention as a whole must >be useful and< accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at *>1373-74<, 47 USPQ2d at

1601-02". Claims 1-13,15,16,18-20,22 are drawn to a computer program therefore is not concrete. Furthermore, claims 1-22, does not produce a tangible result; claims 1-15, 20-22 is drawn to describing an infrastructure for a computing environment, e.g. GUI of an application. Claims 16-19 describe a software model with certain characteristics and properties of that software model.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,647,432 issued to Ahmed et al.(Ahmed) in view of US Patent 6,901,441 issued to Bent et al.(Bent).

As per claim 1, Ahmed teaches a method for dynamically coordinating application interactions and communications in a ubiquitous computing environment having a plurality of heterogeneous machines running a plurality of heterogeneous software applications(Abstract, Fig.32), said method comprising:
enabling said applications to exchange events via an Event Heap(Figs.15-20,32, col.1, lines 15-28) and routing each event by matching certain attributes in said fields(Fig.26, col.25, lines 50-col.26, line29).

Ahmed does not explicitly teach a dynamic application interactions coordination infrastructure, wherein each event is characterized by a set of unordered, named fields.

Bent teaches a dynamic application interactions coordination infrastructure, wherein each event is characterized by a set of unordered, named fields(fig.5B, col.8, lines 25-60).

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to modify the teachings of Ahmed to include a dynamic application interactions coordination infrastructure, wherein each event is characterized by a set of unordered, named fields as taught by Bent in order to share knowledge between heterogeneous devices.

One ordinary skill in the art would have been motivated to combine the teachings of Ahmed and Bent in order to share knowledge between heterogeneous devices.

As per claim 2, the method of claim 1, wherein said attributes include application instance, application name, device name, person, and group(Ahmed, Fig.15-26).

As per claim 3, the method of claim 1, wherein said fields include EventType, SourceID, TargetID, PersonID, GroupID, SequenceID, TimeToLive, and TimeStamp(Bent, col.5, lines 1-33). Motivation to combine set forth in claim 1.

As per claim 4, the method of claim 1, wherein each field contains field type, field name, post value, and template value(Bent, col.5, lines 1-33). Motivation to combine set forth in claim 1.

As per claim 5, the method of claim 1, further comprising: enabling each of said applications to control event delivery and receipt by setting said fields to specific values(Bent, col.5, lines 1-33). Motivation to combine set forth in claim 1.

As per claim 6, the method of claim 1, further comprising: enabling said applications to register interest in certain events and to receive a notification with each matching event posted in said Event Heap(Ahmed, Fig.15-26,col.5, lines 50-col.26, lines 67).

As per claim 7, the method of claim 1, further comprising: automatically setting source and target version of each field of an event when said event is posted in said Event Heap or used as a template(Ahmed, Fig.15-26,col.5, lines 50-col.26, lines 67).

As per claim 8, the method of claim 1, further comprising: enabling said applications to listen for events posted in said Event Heap and emit events as users of said environment interact(Ahmed, Fig.15-26,col.5, lines 50-col.26, lines 67).

As per claim 9, the method of claim 1, further comprising: retrieving an event based on query registration or with an event template(Ahmed, Fig.15-26,col.5, lines 50-col.26, lines 67).

As per claim 10, the method of claim 1, further comprising: supporting a plurality of routing patterns including unicast, broadcast, multicast, and anycast(Ahmed, Fig.14, Fig.10a,b-11).

As per claim 11, the method of claim 1, further comprising: ordering said events first-in-first-out per source at most once(Ahmend, col.7, lines 10-62).

As per claim 12, the method of claim 1, further comprising: implementing said machines with modular restartability such that each of said applications automatically reconnects to said Event Heap upon restart, allowing users of said ubiquitous computing environment to restart one or more of said applications at will without causing adverse affects(Ahmend, Abstract, col.4, lines 15-col.6, lines 50).

As per claim 13, the method of claim 1, wherein said ubiquitous computing environment is characterized as having bounded environment (H 1), human centered interaction and flexible reconfiguration (H2), human level performance needs (H3), hardware heterogeneity (T1), software heterogeneity (T2), short timescale change (T3), and long timescale change (T4)(Bent, Figs.1-11, col.4, lines 33-52, col.5, lines 1-33, col.8, lines 45-67). Motivation to combine set forth in claim 1.

As per claim 14, a computer-readable medium storing a computer program implementing the method of claim 1(Ahmed, Abstract).

As per claim 15, a computer system programmed to perform the method of claim 1(Ahmed, Abstract).

As per claim 16, Ahmed teaches dynamic application coordination infrastructure for a ubiquitous computing environment having a plurality of heterogeneous machines running a plurality of heterogeneous software applications(Abstract, Fig.32), said dynamic application coordination infrastructure comprising: an Event Heap Model having an Event Heap where said applications exchange events based on content thereof(Figs.15-20,32, col.1, lines 15-28).

Ahmed does not explicitly teach a plurality of properties supporting characteristics of said ubiquitous computing environment; wherein said characteristics include bounded environment (H1), human centered interaction and flexible reconfiguration (H2), human level performance needs (H3), hardware heterogeneity (T 1), software heterogeneity (T2), short timescale change (T3), and long timescale change (T4); and wherein said properties include limited temporal decoupling (P1), referential decoupling (P2), extensibility (P3), expressiveness (P4), portable client application programming interface (P5), ease of debugging (P6), perceptual instantaneity (P7), scalability (P8), failure tolerance and recovery (P9), and application portability (P 10).

Bent teaches a plurality of properties supporting characteristics of said ubiquitous computing environment(Figs.1-11); wherein said characteristics include bounded environment (H1), human centered interaction and flexible reconfiguration (H2), human level performance needs (H3), hardware heterogeneity (T 1), software heterogeneity (T2), short timescale change (T3), and long timescale change (T4); and wherein said properties include limited temporal decoupling (P1), referential decoupling (P2), extensibility (P3), expressiveness (P4), portable client application programming interface (P5), ease of debugging (P6), perceptual instantaneity (P7), scalability (P8), failure tolerance and recovery (P9), and application portability (P 10)(Figs.1-11, col.4, lines 33-52, col.5, lines 1-33, col.8, lines 45-67).

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to modify the teachings of Ahmed to include plurality of properties

supporting characteristics of said ubiquitous computing environment as taught by Bent in order to share knowledge between heterogeneous devices.

One ordinary skill in the art would have been motivated to combine the teachings of Ahmed and Bent in order to share knowledge between heterogeneous devices.

As per claim 17, the dynamic application coordination infrastructure of claim 16, further comprising: computer-readable media storing computer-executable instructions implementing a plurality of features causing said Event Heap model to possess said properties, wherein said features comprise standard routing fields, limited data persistence, query persistence and registration, self-description, flexible typing, at most once per source first-in-first-out ordering, and modular restartability(Ahmend, Abstract, col.4, lines 15-col.6, lines 50).

As per claim 18, the dynamic application coordination infrastructure of claim 16, wherein each of said events consists of a set of unordered, named fields; wherein said fields include EventType, SourceID, TargetID, PersonID, GroupID, SequenceID, TimeToLive, and TimeStamp; and wherein said applications control event delivery and receipt by setting said fields to specific values (Bent, Figs.1-11, col.4, lines 33-52, col.5, lines 1-33, col.8, lines 45-67). Motivation to combine set forth in claim 1.

As per claim 19, the dynamic application coordination infrastructure of claim 17, further comprising: snooping means to allow said applications to monitor communications between other applications in said dynamic application coordination infrastructure without effecting sequencing; and interposability means to allow an intermediary application to pick up messages from a source application, translate said

messages to a new format, and forward said messages onto a receiver application recognizing said new format(Ahmend, col.7, lines 10-62).

As per claims 20-22, do not teach or further define over the limitations in claims 1-19 . Therefore claims 20-22 are rejected for the same reasons set forth above.

Conclusion

Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Backhean Tiv whose telephone number is (571) 272-5654. The examiner can normally be reached on M-F 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Valencia Wallace can be reached on (571) 272-3440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BackheanTiv
2151
9/14/07

D. Mark Wallace
SPE AU 2151